

- PUMPS AND INFUSION APPARATUS
- CINEPHOTOMICROGRAPHIC EQUIPMENT
- PHYSIOLOGICAL AND MEDICAL INSTRUMENTS

Pumps and Infusion Apparatus

SYRINGE PUMPS for uniform, accurate, and reproducible infusion of fluids.

CONSTANT SPEED SYRINGE PUMPS

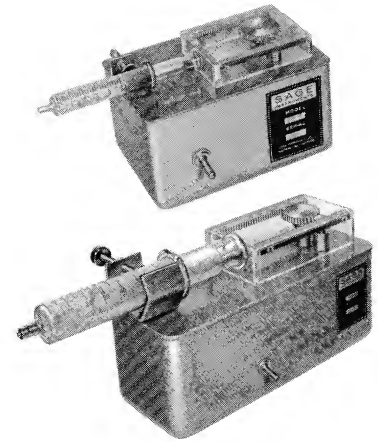
Sage constant speed pumps are driven by synchronous motors, offer flow rate reproducibility of better than $\pm 0.1\%$.

Small Constant Speed Syringe Pump Series 234

There are seven models in this series, each of which has a different speed motor and covers a different range of flow rates. A large number of discrete flow rates are available with each model by varying syringe size or by quickly interchanging gears. Price \$ 145.00

Large Constant Speed Syringe Pump Series 249

There are six models in this series, each covering a different flow rate range. Each model yields three different rates for each size syringe (two from the standard gears supplied, plus one from an optionally available pair). Syringes from μl size to 100ml capacity may be used. Price 215.00



VARIABLE SPEED SYRINGE PUMPS

Sage variable speed pumps include an electronic feedback circuit that regulates the DC motor to $\pm 0.5\%$ independent of variations in line voltage up to $\pm 10\%$.

Small Variable Speed Pumps Series 237

Three models are available, each offering a continuously variable range of 62.5 to 1 with each size syringe. Accepts syringes up to 10 cc size. Overall flow rate ranges are:

- Model 237-1: 0.014 $\mu\text{l}/\text{min}$ to 17 ml/min
- Model 237-2: 0.044 $\mu\text{l}/\text{hr}$ to 56 ml/hr
- Model 237-3: 0.055 $\mu\text{l}/\text{day}$ to 67 ml/day

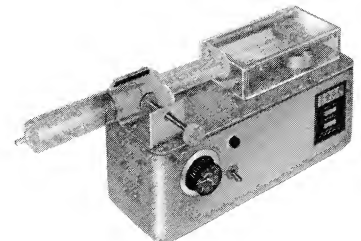
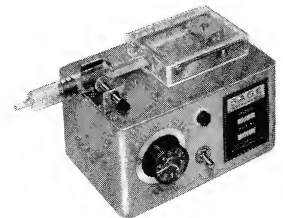
Price \$ 325.00

Large Variable Speed Pumps Series 255

Three models are available, each providing a 5 million to 1 flow rate range. Each offers a continuously variable rate range of 75:1 with any one syringe size. Accepts syringes up to 100 cc size. Overall flow rate ranges are:

- Model 255-1: 0.0034 $\mu\text{l}/\text{min}$ to 29 ml/min
- Model 255-2: 0.011 $\mu\text{l}/\text{hr}$ to 98 ml/hr
- Model 255-3: 0.014 $\mu\text{l}/\text{day}$ to 118 ml/day

Price \$ 395.00



INFUSION/WITHDRAWAL MODELS

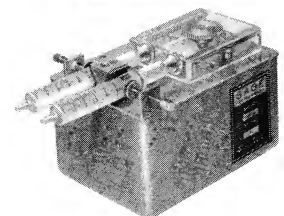
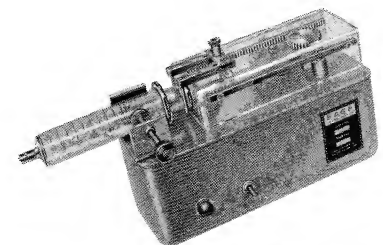
Sage Series 249 and 255 syringe pumps are available in infusion/withdrawal models identified as 249W and 255W respectively, with the appropriate sub-model numbers. These pumps provide the added versatility of withdrawing as well as infusing fluids at the same rates as the infusion models.

Price: 249W - \$ 290.00 Price: 255W - \$ 470.00

DOUBLE SYRINGE HOLDERS

The Model 196 and Model 283 double syringe holders (for infusion only) are optional accessories for Sage pumps. The Model 196 (for small pumps) accepts any two syringes up to 10cc capacity each for two channel pumping. The Model 283 (for large pumps) accepts any two syringes up to 50 cc capacity.

Price: Model 196 - \$ 20.00 Price: Model 283 - \$ 35.00

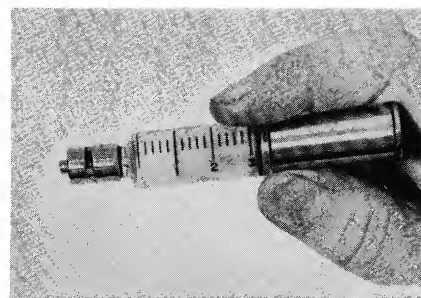


Pumps and Infusion Apparatus

MICRO-FLOW PUMPS

Models available with 1, 2½, and 10 ml capacities. These miniature, self-contained battery operated units are designed for continuous infusion of drugs or other liquids at various pre-determined rates from 1 ml/half hour to 1 ml/24 hr. Flow rate is constant and reproducible. This self-actuated syringe pump can be taped or strapped to the subject's body, permitting long term chemotherapy of ambulatory patients or drug experiments with unrestrained animals.

Price from \$ 65.00



UNIFORM FLOW PUMP MODEL 092

Sage Model 092 Uniform Flow Pump is a closed system, continuously adjustable three cylinder pump designed to provide truly uniform flow with remarkable accuracy and reproducibility over its entire range of 0.3 to 100 ml/min. Virtually unaffected by changes in inlet and outlet pressures, this precalibrated pump may be operated continuously for extremely long periods of time. It can also be used as three separate pulsatile pumps, each yielding 1/3 of the set flow.

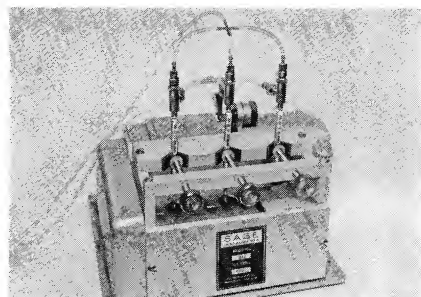
Price \$2380.00



CHIMNEY PUMP MODEL 212

The Sage Model 212 chimney pump is a positive displacement pump which provides continuously variable uniform pumping of fluids from a reservoir. It uses standard syringes as the three cylinders. A variable speed drive with precise settings provides accurate, reproducible, and continuously adjustable flow rates from 0.5 to 270 ml/min. If desired, the pump can be used as a three channel pulsatile unit.

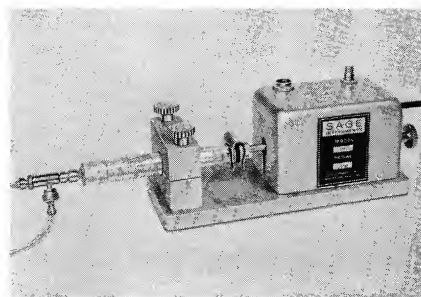
Price \$ 495.00



AUTOMATIC INJECTOR MODEL 067

The Sage Model 067 automatic injector automatically and repetitively injects reproducible quantities of fluid ranging from 0.1 ml to 4.5 ml from standard 5 or 10 cc syringes. This instrument utilizes a solenoid actuator to drive the piston of a syringe. Spring return rapidly and automatically resets the mechanism and a special valve allows the syringe to inject and refill repetitively. The Sage Model 067 automatic injector will pump against five atmospheres of back pressure.

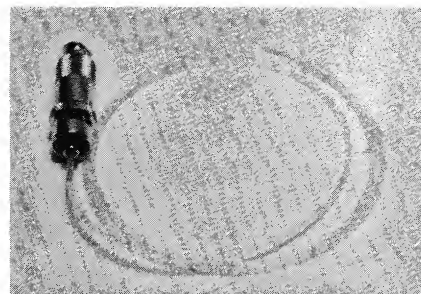
Price \$ 195.00



WATER-TIGHT SWIVEL 120

The Model 120 swivel is a leak-proof rotating coupling that permits continuous infusion into small, unrestrained laboratory animals. For example, with a pump suspended above the cage, a catheter connected to the swivel will turn freely without leakage, and could therefore be attached to the caudal vein of a rat.

Price \$ 30.00

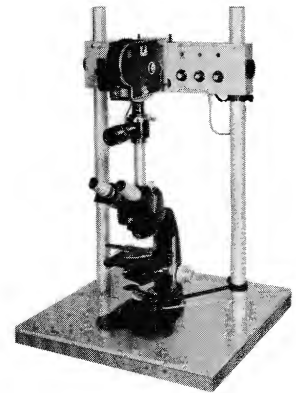


Cinephotomicrographic Equipment

SERIES 500

The Sage Series 500 is a complete, low-cost system for cinephotomicrography that takes only 21" x 21" of table-top space. One model, adjustable in height, may be used with any upright microscope fitted with a vertical phototube. (Other models are available for use with inverted microscopes.) It may be operated at both time lapse and normal (12-32 frames per second) speeds. The Series 500 is fitted with a Bolex H-16M camera which incorporates built-in frame and footage counters and a 100 foot capacity film magazine. All controls are conveniently located in the bridge assembly, including regulated power supply to insure reproducibility of timing regardless of line voltage changes of $\pm 10\%$. The Sage Series 500 is engineered to damp both external and internal vibrations, and provides excellent pictures at high magnifications.

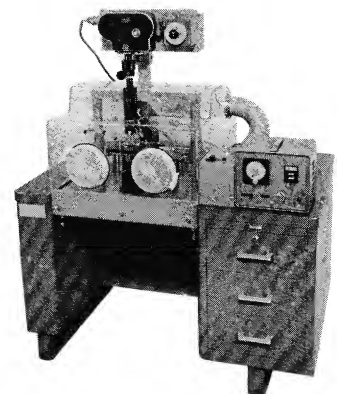
Price \$1495.00



SERIES 300

The Sage Series 300 time lapse apparatus is a complete system for taking high quality motion pictures through the microscope at time lapse, normal and slow motion speeds. Camera, viewing and vibration isolation are all compatible parts of a carefully engineered overall design. The instrument takes pictures with any illumination source accepted by the microscope. It is available in various models, each designed for a particular microscope (upright or inverted). The Sage Series 300 features a desk-mounted vibration isolation system, camera, camera drive, viewing telescope, auxiliary camera shutter, exposure timing controls for continuous light photography, trigger for flash synchronization, and incubator (optional). The Series 300 can be later converted to a Series 100.

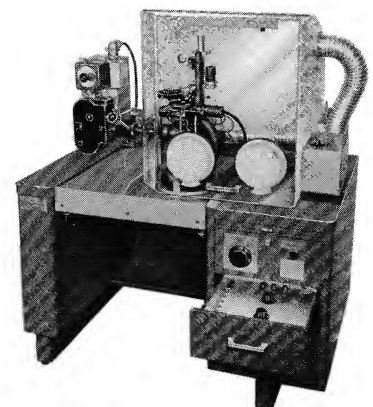
Price from \$3250.00



SERIES 100

The Sage Series 100 is available in a variety of models — each specially designed for the particular upright or inverted microscope specified. This unit includes the features of the Series 300 and adds a high voltage power supply, control drawer, and dual light source for the Sage flash system. The dual light source consists of a high intensity small area xenon flash lamp optically aligned with a conventional tungsten microscope bulb. The exclusive xenon flash for taking time lapse motion pictures freezes motion and assures sharp, clear pictures at the highest magnifications.

Price from \$6750.00



AIR CURTAIN INCUBATOR MODEL 279

The Sage Air Curtain Incubator controls temperature of biological specimens under the microscope to $\pm 0.2^\circ\text{C}$. This instrument is essentially a sensitive air stream temperature gun and controller which blows a soft stream of ambient or electrically heated air on the specimen — as demanded by a thermistor. The thermistor senses and controls the temperature within very narrow limits. The unit is supplied with a mounting stand and measures less than 4" x 4" x 8".

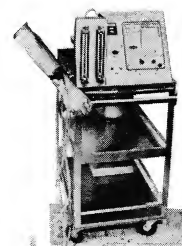
Price \$ 395.00



Physiological and Medical Instruments

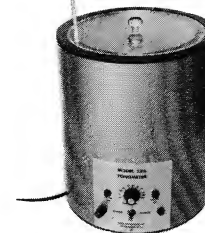
SWEAT RATE MONITOR MODEL 154

The Sage Model 154 Sweat Rate Monitor is an instrument for recording transepidermal water loss (sweat rate) by resistance hygrometry. The monitor collects and records all data necessary for calculating the rate at which an area of skin on a subject is losing water to the air. Dry air is passed over a selected area of skin at an adjustable and measured rate and the relative humidity of the air is measured after the air contacts the skin. The range of the instrument permits accurate measurements on subjects over a wide humidity range. Price \$2995.00



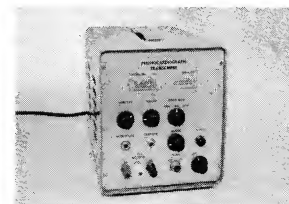
BLOOD GAS TONOMETER MODEL 280

The Sage Blood Gas Tonometer is a rapid, temperature controlled liquid-gas equilibration system. Its major application is in calibration of oxygen and carbon dioxide electrodes for blood gas analysis. The calibrating gas is passed through a bubbler where it is both warmed and saturated with water vapor. It is then passed through a trap and through the tonometer flask. Up to four liquid samples may be equilibrated simultaneously. The flasks containing the liquid samples are each swirled at 180 RPM in an enclosed water bath whose temperature is controlled to $\pm 0.05^{\circ}\text{C}$. Price. \$ 975.00



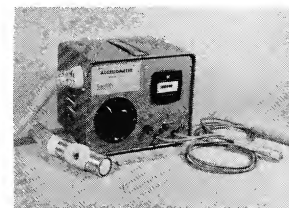
PHONOCARDIOGRAPH TRANSCRIBER MODEL 084

The Sage Phonocardiograph Transcriber will plug into any standard ECG recorder and permits writing tracings of the heart sounds in any of three frequency bands. Since frequency response of most ECG penwriters is limited to about 80 cps and heart sounds go to higher frequencies, two bands are rectified. The 20 - 80 cps band is printed directly. The 80-240 and over 240 cps bands are printed in envelope form which still contains the vital diagnostic information. A blip below the line on the selected channel shows the R wave of the ECG and defines the timing. Price \$ 675.00



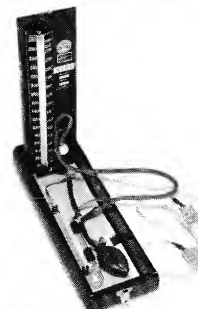
ALGESIOMETER MODEL 024

The Sage Algesiometer measures the pain threshold of a subject by the application of controlled heat to the skin. This unit generates from zero to 375 millicalories/sec/cm². The heating probe is fan-cooled for fast cooling and rapid re-use. Heat is directed to a skin area approximately 1.3 cm sq. An "on" switch is controlled by the operator, the "off" switch by the patient. An automatic timer measures the duration of the heat stimulus to the nearest 0.1 second. The Model 024 can also be used for producing burns of known severity. Price. \$ 750.00



SPHYGMOMANOMETER MODEL 209

The Sage Model 209 Sphygmomanometer permits taking reliable, reproducible readings of blood pressure of new-born infants, premature babies, and young children. The instrument is also useful with adults, particularly where a stethoscope cannot be used. The apparatus consists of a sphygmomanometer with a glass-enclosed mercury column to indicate pressure and an associated plethysmograph system which indicates the presence of a pulse. The visual pulse indicator includes a glass capillary tube which contains drops of xylene which move sharply up and down when a pulse is present. Two small cuffs, a proximal cuff for occlusion and a distal cuff for pulse sensing, are included. A special extra-long cuff is available for use with dogs. Price \$ 95.00



ELECTROCARDIOPHONE MODEL 157

The Electrocardiophone (ECP) is a new instrument for diagnosis of cardiac arrhythmias. Like the electrocardiograph it detects changes in voltage produced by the heart. Instead of a visual display, the ECP converts these voltage changes to a sound pattern so that a rise in voltage is represented as a rise in pitch. Although it does not replace the ECG, it has many advantages in situations where written records are less important than a fast accurate diagnosis. The instrument is simply placed on the precordium and turned on. It permits quickly differentiating between ventricular fibrillation and asystole, and identifying many other arrhythmias. It may be used for monitoring as well as for diagnostic work. Battery powered, its small size and light weight permit it to be carried in the pocket. Price \$ 175.00



CUSTOM INSTRUMENTS

Sage Instruments, Inc., has developed a large number of instruments, primarily for medical and biological research, on a custom order basis. A considerable engineering competence, and sufficient knowledge of physiological problems, is available for the solution of special problems where the necessary instrumentation is not commercially available. A careful definition of the problem, and as much background and specification data as possible, should be supplied. Where the problem presents complexities that prohibit quoting a fixed price, projects are taken on a time and materials basis with budgets estimated and submitted prior to starting work.

(Prices and specifications subject to change without notice. All prices F.O.B. White Plains, New York)

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Would you like complete catalog data? Please check the literature desired.

☐ SAGE SYRINGE PUMPS

☐ Air Curtain Incubator Model 279

☐ MICRO-FLOW PUMPS

☐ Sweat Rate Monitor Model 154

☐ Uniform Flow Pump Model 092

☐ Blood-Gas Tonometer Model 280

☐ Chimney Pump Model 212

☐ Phonocardiograph Transcriber
Model 084

☐ Automatic Injector Model 067

☐ Algesiometer Model 024

☐ Water-tight Swivel Model 120

☐ Sphygmomanometer Model 209

☐ SAGE CINEPHOTOMICROGRAPHIC
INSTRUMENTS

☐ Electrocardiophone Model 157

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